

Claims

1. A zirconium-containing powder for the deposition of layers of zirconium oxide, obtainable by

- (a) reacting a zirconium alcoholate with a diketone,
- (b) heating the solution,
- (c) mixing the solution with water, optionally in the presence of a catalyst,
- (d) concentrating the solution until a powder is obtained.

2. Zirconium-containing powder according to claim 1, characterized in that it has a zirconium content from 30 to 55 wt. %.

3. A coating solution for producing layers of zirconium oxide, comprising a colloidal solution of the zirconium-containing powder in an alcohol, in a diol, in an amine, in water or in mixtures thereof, said zirconium-containing powder, obtained by (a) reacting a zirconium alcoholate with a diketone, (b) heating the solution, (c) mixing the solution with water, optionally in the presence of a catalyst, and (d) concentrating the solution until a powder is obtained.

4. Coating solution according to Claim 3 characterized in that silicon alcoholate of the general formula $\text{Si}(\text{OR})_4$, in which the residues R are the same or different and represent straight-chain, branched-chain or cyclic alkyl or alkenyl residues with 1 to 10 carbon atoms, which optionally exhibit one or more carbonyl and/or ester and/or carboxyl functions, have been added to said coating solution after dissolution of the zirconium-containing powder.

5. The coating solution according to Claim 3, characterized in that said coating solution additionally comprises soluble polymers, in particular polyethylene glycols.

6. The coating solution according to Claim 3, characterized in that said coating solution contains 15% by weight ZrO_2 .

7. The coating solution according to Claim 3, characterized in that the solvent mixture comprises propanediol, triethanolamine and water.

5 8. Coating solution according to Claim 7, characterized in that the weight ratio of propanediol, triethanolamine and water is 60:10:30.

9. The coating solution according to Claim 3 characterized in that the solvent mixture comprises 1,5-pentanediol and ethanol in a weight ratio from 5/95 to 45/55 and the
10 solids content of the sol amounts to 5-10% by weight ZrO_2 .

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